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(72) Inventor(s): Steven Bailey		(58) Field of Search: UK CL (Edition V) A1M MDE MDG MDH INT CL ⁷ A01M 1/20 23/00 25/00 Other: Online: WPI, EPODOC, PAJ
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(54) Abstract Title: Bait holder

(57) A rat bait holder 2 which includes an internal bait region 16 for holding rat bait, and a closure element 20 such as a door, whereby the closure element 20 is held in an open position such that the bait region 16 is open when the bait holder 2 is in a working position, and when the bait holder 2 is moved the closure element 20 moves to a closed position thus closing the bait region 16 and inhibiting access to the bait. The closure element 20 may be held open using a pin (50, Figure 5) which projects through an opening (52, Figure 5) in a wall of the bait holder, and which descends through the opening (52, Figure 5) when the bait holder 2 is moved, thus allowing the closure element 20 to close the bait region 16.
The bait holder 2 may also include a lockable lid (6, Figure 1), preventing unauthorised access to the bait and closure element 20, and may have means to fix it to a wall bracket (60, Figure 6).

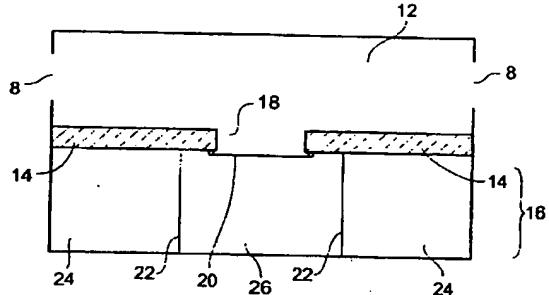


Fig. 2

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At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

The claims were filed later than the filing date but within the period prescribed by Rule 25(1) of the Patents Rules 1995.

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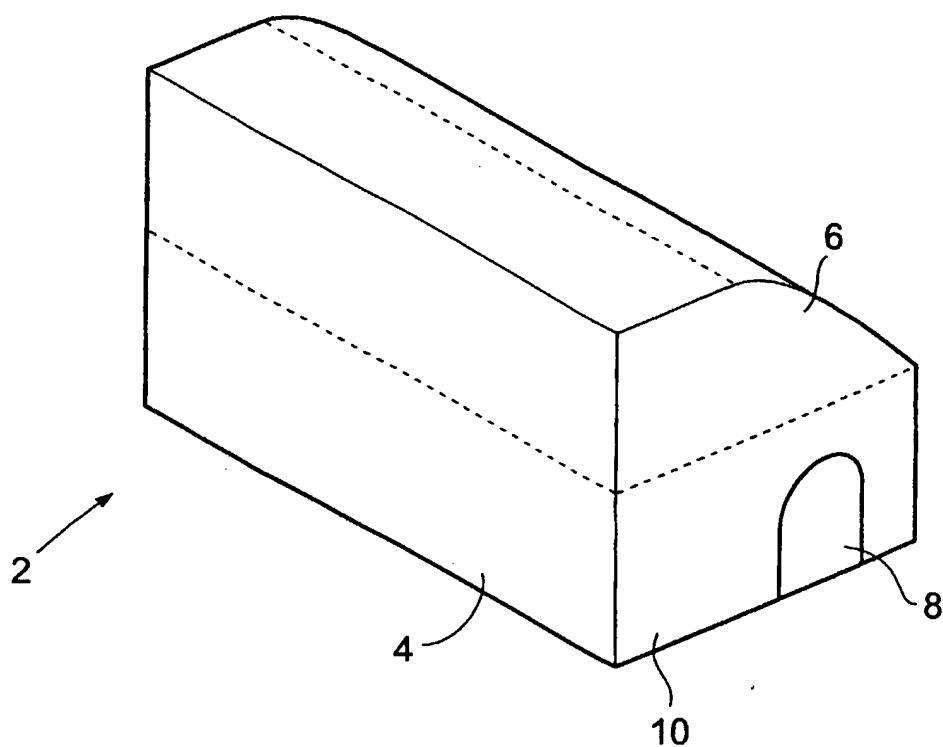


Fig. 1

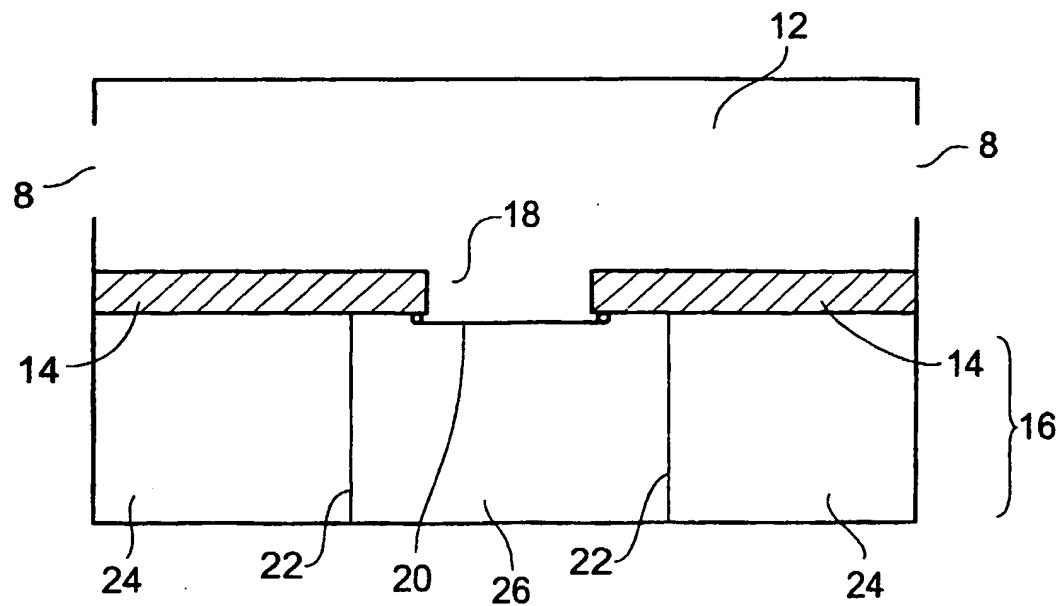


Fig. 2

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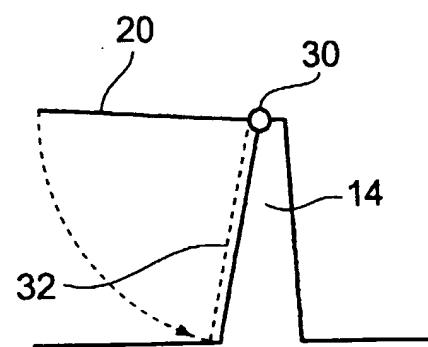


Fig. 3

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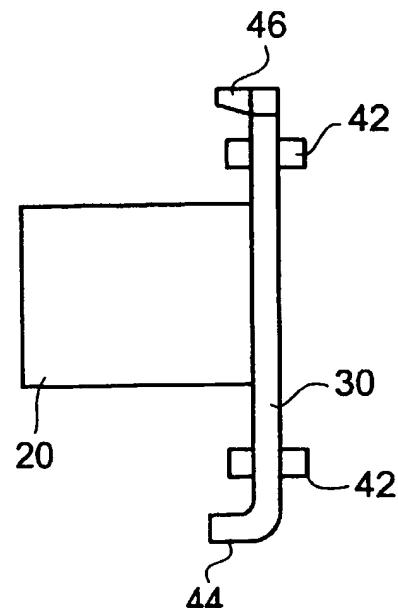


Fig. 4

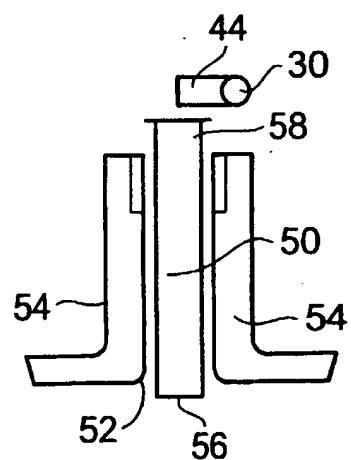


Fig. 5

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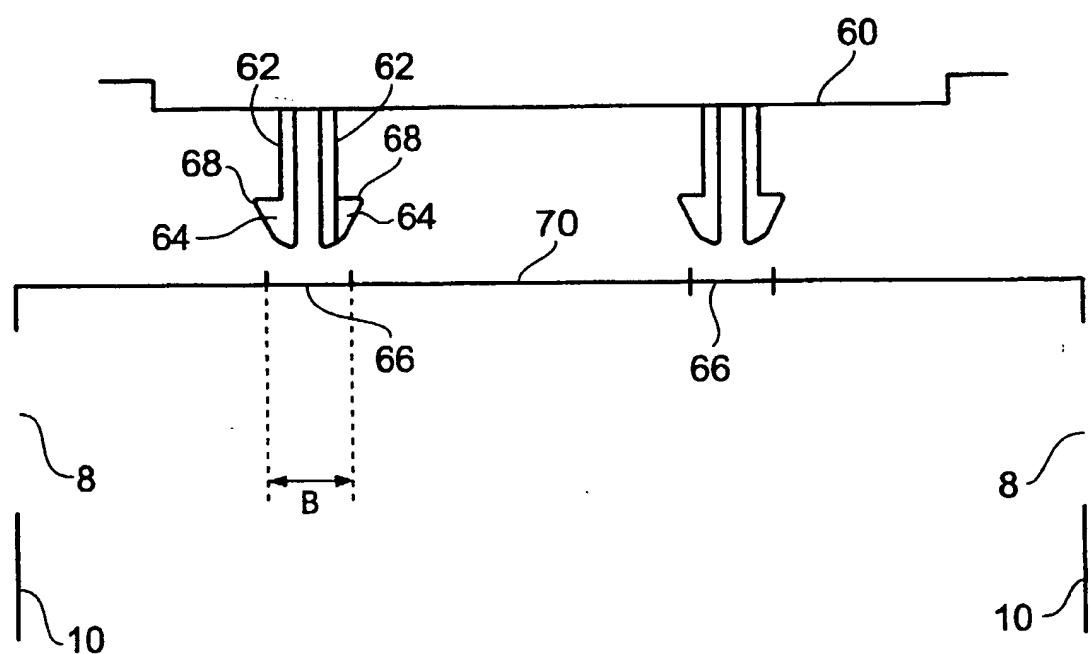


Fig. 6

Bait Holder

The present invention relates to a bait holder, and in particular to a bait holder suitable for use with poisoned cereals, such as grain, or with poison in a loose or pellet-like form.

Rodents, such as rats, are a common pest. It is highly undesirable that they should live near large stores or retailers of food. It is therefore known to use poisoned food in order to keep the rat population under control, or to eradicate them completely.

It is known to provide bait boxes in which poison in a tablet form having a hole formed therethrough is suspended from a carrying bar. This means that the poison cannot be easily or accidentally removed from the bait box, for example by children playing with it, but similarly the bait is not in a very natural form and hence the rats may be suspicious about eating it.

According to a first aspect of the present invention, there is provided a bait holder comprising a container having at least one opening therein through which an animal can pass to enter or leave the interior of the container, and the container further includes a bait region which is sealed from the rest of the interior of the container other than by an opening through which animals can take the bait, and in which the opening to the bait region is selectively closable by a closure element and a control mechanism which when the bait holder is in a working position holds the closure element in a first position such that the opening to the bait region is open, and which operates to allow the closure element to move to a closed position to close the bait region when the bait holder is moved from the working position.

It is thus possible to provide a bait holder which automatically closes off access to its bait region if it is moved, for example by children, from its normal working position. This has the advantage that such a container can be used with poisoned grain. Grain represents a far more natural food for rodents and it's believed that they will take grain far more easily than they will eat the manufactured pellets. The action of the closure element to close the bait

region if the container is moved means that the positioned grain will not fall out of the bait region even if the bait holder is inverted or shaken.

Preferably the size of the at least one opening and/or the distance between the or each opening and the closure element is such that it is difficult for a person or child to get their hand through the at least one opening and to reach the closure element in an attempt to open it.

Advantageously the container has integrally formed walls therein which serve to define the bait region.

Alternatively, the bait region and its associated closure element and closure element operating mechanism may be provided as an additional unit which may be retro-fitted to existing bait containers.

Advantageously the closure element is biased towards the closed position. This has the advantage that the closure element need not rely on operation by gravity, and that if the bias force is great enough, the closure element will not open when the bait holder is inverted or shaken.

Advantageously a simple locking mechanism, such as detent or tang or spring actuated element may move to lock the closure element in the closed position.

Preferably the closure element operating mechanism comprises a pin or similar element which projects through an opening in the base of the container and is slidable such that, when the container is resting on a surface, the pin causes the closure element to be held in the open position. However, if the container is lifted, the pin descends through the floor of the container thereby moving to a position such that it no longer inhibits motion of the closure element to the closed position.

The pin or equivalent element may have an enlarged head or other projection such as a lateral projection in order to ensure that it remains captured within the container and does not fall out when the container is lifted.

Advantageously the container has fixing means for engaging with a wall bracket such that the container can be releasably secured to the wall bracket. Advantageously projections from the wall bracket extend through openings in the container in order to engage it. Advantageously the container can only be released from the bracket by opening the container and operating a release mechanism from within. Alternatively a key may be used to release the container from the bracket whilst the container is locked.

Preferably the container has a lockable lid such that access to its interior can only be obtained by authorised personnel.

Preferably the closure element can only be reset to the open position when the lid is open.

According to a second aspect of the present invention, there is provided a rat bait holder having a closure element and means for holding the closure element in an open position until such time as the container is moved, whereby the closure element moves to a closed position.

The present invention will further be described, by way of example, with reference to the accompanying drawings, in which;

Figure 1 is a perspective view of a rat bait holder constituting an embodiment of the present invention;

Figure 2 is a plan view of the internal arrangement of the container shown in figure 1 when the lid thereof has been removed;

Figure 3 schematically illustrates the action of the closure element;

Figure 4 illustrates an example of the closure element and its support in further detail;

Figure 5 is a schematic representation showing the action of the locking pin; and

Figure 6 schematically illustrates the arrangement for releasably securing the container to a wall bracket.

Figure 1 schematically illustrates the exterior of a bait holder constituting an embodiment of the present invention. The holder is formed from a container, generally indicated 2, which is formed from a base 4 and a lid 6. The lid is advantageously hinged to the base 4 along a hinge line (not shown). An aperture 8 is provided in a side wall 10 of the base 4 to allow for the entry and exit of rodents to the interior of the container. A similar aperture is formed in the opposing end wall of the container.

Figure 2 shows the interior layout of the container 2 with the lid 6 removed. The apertures 8 define either end of a conduit 12 through which rats are expected to pass. Rats do not like crossing open ground, and therefore if the container 2 is placed at the foot of a wall with the apertures 8 nearest the wall, then the rats will tend to walk through the container 2 rather than around it. The container is subdivided by walls 14 in order to form a bait region 16 which can only be accessed via an opening 18 centrally disposed within the container. The opening 18 can be selectively closed by a closure element 20, for example in the form of a spring loaded door. Low internal wall portions 22 which extend only a centimetre or so from the floor of the base 4 may be provided in order to hold the poisoned grain in grain trays 24 and thereby keep it away from a central region 26 of the bait region 16.

Figure 3 is a sideways view of the door 20 and its relationship to the walls 14. In normal use, the door 20 is held in the position shown in figure 3 such that the aperture 18 is open for the passage of rats to and from the poison grain store or bait region. The door is held on a support bar 30 which generally engages with the top of the wall 14 and in this example is offset to one side thereof such that, when the door closes it assumes the position indicated by the chain line 32 in figure 3. Thus, in the closed position, the door lays flat against the wall 14 thereby preventing the egress of material from the bait holder 16.

Figure 4 schematically illustrates an example of a door closing mechanism. The door 20 is securely attached to the bar 30 which is rotatably held by support elements 42 formed as part of the wall 14. The bar 30 has a hooked region 44 which forms part of the door control mechanism. The bar 30 may have a further extension 46 which in use engages with a biasing means, such as a compression spring or a helical spring which urges the bar 30 to rotate in such a sense as to urge the door 20 to close the opening 18 to the bait region.

Figure 5 illustrates the operating mechanism in greater detail. As shown in figure 5, a pin 50 is held in a cylindrical passageway 52 defined by walls 54 of the base 4 of the container. A lowermost end 56 of the pin 50 projects through an opening in the base of the container such that in use, it abuts the ground which supports the container. In this configuration, as shown in figure 5, an upper portion 58 of the pin 50 abuts the hooked region 44 of the bar 30 and thereby holds the door 20 in its open configuration. However, if the rat bait holder is lifted then the pin 50 descends with respect to the container and hence the upper portion 58 of the pin 50 moves out of engagement with the portion 44 of the bar 30 thereby allowing the bar 30 to rotate under the urging of the biasing means such that door 20 moves to the closed position 32 shown in figure 3.

Figure 6 schematically illustrates the interconnection between the container 2 and a wall-mounted holding bracket 60. The bracket 60 may be secured to a wall using screw fastenings. The use of a bracket stops the malicious removal of rat bait holders from their intended position. In the example shown in figure 6, the bracket 60 has a series of extending arms 62 carrying barbed regions 64 which, in use, pass through corresponding openings 66 formed in the container 2. The arms 62 are slightly resilient such that they bend inwardly as the barbed portions 64 pass through the opening 66. The diameter of the opening 66 is slightly less than the distance B representing the distance between the end portions 68 of a co-operating pair of barbs. Thus, in use the barbs engage with the inner surface of the wall 70 of the container 2 thereby preventing removal of the container from the bracket.

In order to release the container from the bracket 60, the lid 6 of the container needs to be opened such that a user can either manually or using a tool compress the ends of the barbs 64 such that they flex towards one another and can then pass through the aperture 66.

In an alternative arrangement, only one barb per aperture may be provided but each barb must still be flexed in order to release the container.

It is thus possible to provide a rat poison holder which is safe to use with poisioned grain since any inadvertent or malicious attempt to move the container from its operating position is either inhibited by the use of a bracket 60, and/or results in the operation of the internal closure mechanism in order to prevent the escape of grain or other poisoned material from the bait holding region.

CLAIMS

1. A bait holder comprising a container having at least one opening therein through which an animal can pass to enter or leave an interior of the container, and the container further includes a bait region for holding bait which is sealed from the rest of the interior of the container other than by an opening through which animals can take the bait, and in which the opening to the bait region is selectively closable by a closure element and a control mechanism which when the bait holder is in a working position holds the closure element in a first position such that the opening to the bait region is open, and which operates to allow the closure element to move to a closed position to close the bait region when the bait holder is moved from the working position.
2. A bait holder as claimed in claim 1, wherein the closure element becomes locked in the closed position when it moves to the closed position.
3. A bait holder as claimed in claim 1 or 2, wherein the closure element is biased towards the closed position.
4. A bait holder as claimed in any one of the preceding claims, wherein the container further comprises integrally formed walls which define the bait region.
5. A bait holder as claimed in any one of the preceding claims, wherein the control system comprises a moveable element which projects through an opening in a base of the container, so that when the bait holder is in the working position the moveable element causes the closure element to be held in the open position, and when the bait holder is moved from the working position the moveable element moves so as to allow the closure element to move to the closed position.
6. A bait holder as claimed in claim 5, wherein when the bait holder is moved from the working position, the moveable element moves at least partially out of the container through the opening.

7. A bait holder as claimed in claim 6, wherein the moveable element includes at least one enlargement or projection which prevents the moveable element from moving fully out of the container through the opening.
8. A bait holder as claimed in any one of the preceding claims, wherein the bait holder further comprises a lid which must be opened in order to allow access to the closure element to reset the closure element to the open position.
9. A bait holder as claimed in claim 8, wherein the lid is lockable so as to prevent unauthorised opening of the lid.
10. A bait holder as claimed in any one of the preceding claims, wherein the bait holder further comprises fixing means for fixing it to a wall bracket.
11. A bait holder as claimed in claim 10 wherein the fixing means comprises at least one mounting hole for engaging with at least one projection of the wall bracket.
12. A bait holder as claimed in claim 10 or 11, wherein the bait holder further comprises a lid which must be opened in order to allow access to releasing means for releasing the bait holder from the wall bracket.
13. A bait holder as claimed in claim 12, wherein the lid is lockable to prevent opening of the lid.
14. A bait holder as claimed in claim 10 or 11, wherein the bait holder further comprises release means which must be operated with a key in order to release the bait holder from the wall bracket.



INVESTOR IN PEOPLE

Application No: GB 0217634.5
Claims searched: 1-14

Examiner: Sarah Barker
Date of search: 12 November 2003

Patents Act 1977 : Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance	
X, Y	X: 1-7 at least Y: 10-14	US 4182070	(CONNELL Y) - whole doc relevant, see especially col 2 line 59 - col 3 line 10
X, Y	X: 1, 3-7 at least Y: 10-14	GB 2333437 A	(MORLEY) - whole doc relevant, see especially figures 9 & 10
X, Y	X: 1-4, 8-9 at least Y: 10-14	US 4261132	(CARTHERS et al.) - whole doc relevant, see especially figure 3 and col 2 line 64 - col 3 line 9
X, Y	X: 1-6 at least Y: 10-14	US 5446992	(STEWART) - whole doc relevant, see especially figure 6
Y	10-14	GB 2382515 A	(KILLGERM) - see page 2 paragraph 4 - page 3 paragraph 2

Categories:

X Document indicating lack of novelty or inventive step	A Document indicating technological background and/or state of the art.
Y Document indicating lack of inventive step if combined with one or more other documents of same category.	P Document published on or after the declared priority date but before the filing date of this invention.
& Member of the same patent family	E Patent document published on or after, but with priority date earlier than, the filing date of this application.

Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKCV:

AIM (MDE, MDG, MDH)

Worldwide search of patent documents classified in the following areas of the IPC⁷:

A01M (25/00, 23/00, 1/20)

The following online and other databases have been used in the preparation of this search report:

WPI, EPODOC, PAJ